



GLOBAL REACH™/WIRELESS FIRST RESPONDER SOUND PRESSURE LEVEL (SPL) TESTS MARCH 28TH, 2013

INTRODUCTION:

Enforcement Technology Group, Inc. (ETGI) recently performed tests to measure the sound pressure level generated during the operations of the Wireless First Responder and Global Reach™ Wireless Hailer.

The Wireless First Responder is loudspeaker that is equipped with:

- An Integrated/Internal 2-channel VHF Wireless Receiver
- A 12v Rechargeable Battery and AC Power Adapter/Charger
- (1) ¼" (6.33mm) MIC Input jack
- (1) 1/8" (3.5mm) LINE IN jack
- Loudspeaker Volume Control/Gain Dial
- Frequency Select Switch

The Wireless First Responder is delivered with the following accessory components:

- A 2-channel VHF Wireless Transmitter Pack with 1/8" (3.5mm) IN jack and Remote Volume Control Dial (9v battery powered)
- A Handheld Microphone with ¼" (6.33mm) plug
- A Lapel Microphone with 1/8" (3.5mm) plug
- A Digital Voice Recorder
- Miscellaneous Cables and Adapters

The Wireless First Responder is configured in such a way to support "local" and "wireless" operations.

Local operations would involve the operator connecting an external audio source (handheld microphone, lapel microphone, or digital voice recorder containing audio files to be broadcast) directly to the loudspeaker's ¼" (6.33mm) MIC Input jack or 1/8" (3.5mm) LINE IN jack.

Once connected, the operator would use the loudspeaker's volume control/gain dial to set the device to the desired broadcast volume level.



The loudspeaker would in turn amplify and broadcast the sound delivered by the external audio source connected to the device.

*Wireless operations would involve the operator connecting an external audio source (microphone or digital voice recorder) into the 2-Channel VHF wireless transmitter pack.

The operator would first set the loudspeaker's volume control/gain dial to set the device to the desired broadcast volume level.

The operator would then set the loudspeaker's frequency select switch to the same transmission frequency of the transmitter pack.

The loudspeaker would in turn amplify and broadcast the sound delivered by the external audio source connected to the transmitter pack.

The operator may use the transmitter's remote volume control dial to remotely increase or decrease the volume level output of the loudspeaker.

The effective wireless transmission range between the transmitter pack and the loudspeaker's internal VHF receiver is approximately 150 (45.72m) to 200 ft. (60.96m).

The Global Reach™ Wireless Hailer is a variation of the Wireless First Responder.

The Global Reach™ Wireless Hailer consists of a SWAT Network Gateway™ Box that connects to the loudspeaker component. The SWAT Network Gateway™ Box is equipped with:

- An Internal Rechargeable Battery
- A Global Standard for Mobile (GSM) Subscriber Identity Module (SIM) Card Insertion Slot
- Proprietary GSM and Short Message System (SMS) Technology
- An Antenna
- A ¼" (6.33mm) Audio Out jack

The SWAT Network Gateway™ Box serves as a bridge between a GSM cellular network and the loudspeaker component which in turn provides the operator with a virtually unlimited effective wirelessly transmission/operating range.



After an active GSM SIM Card has been installed, the SWAT Network Gateway™ Box is connected to the loudspeaker component.

One end of a ¼ (6.3mm) Patch Cable is connected to SWAT Network Gateway™ Box's "Audio Out" jack and the other end is inserted into the loudspeaker component's ¼ (6.33mm) "MIC" Input jack.

Once connected, the operator would first set the loudspeaker's volume control/gain to the desired broadcast volume level.

The operator would then use a cell phone or external landline to place an outgoing call to the SIM Card installed into the SWAT Network Gateway™ Box that is connected to the loudspeaker.

When the call is received by SWAT Network Gateway™ Box, it is automatically answered and whatever the operator speaks into the microphone of the cell phone or telephone handset used to place the call is broadcast is amplified and broadcast through the loudspeaker.

The operator may remotely increase or decrease the output volume level of the loudspeaker by sending the SWAT Network Gateway™ Box an SMS (text) message command as follows:

- Sp1 SMS Command = Set Loudspeaker Volume Output to Level 1 (lowest level)
- Sp2 SMS Command = Set Loudspeaker Volume Output to Level 2 (second lowest level)
- Sp3 SMS Command Set Loudspeaker Volume Output to Level 3 (mid level)
- Sp4 SMS Command = Set Loudspeaker Volume Output to Level 4 (second highest level)
- Sp5 SMS Command = Set Loudspeaker Volume Output to Level 5 (highest level)

TESTING MATERIALS USED:

- (1) Global Reach™/Wireless First Responder
- (1) 2-Channel VHF Wireless Transmitter Pack
- (1) Lapel Microphone
- (1) Handheld Microphone
- (1) ¼" (6.33mm) Patch Cable
- (1) Cell Phone



- (1) Tape Measurer
- (1) Sound Pressure Level (SPL) Gauge*
- (1) Video Camera

*Scosche Model #SPL1000.

TEST MATERIAL CONFIGURATION/ENVIRONMENT:

The loudspeaker was set up on a conference room table.

The SPL Gauge was set 1 meter away from the loudspeaker and positioned so it was facing the loudspeaker.

A video camera was used to film the SPL Gauge reading while tests were performed using the equipment in the following configurations*:

- Radio Frequency (RF) Wireless Operations via Transmitter Pack and Integrated Wireless Receiver
- Local Wired Operations via Handheld Microphone
- Cellular Wireless Operations via SWAT Network Gateway™ Box

***NOTE:** *These videos have been provided to the client and are named "WFR-SPL-TESTS" and "GRW-MaxFinal."*

TESTING RESULTS:

Radio Frequency (RF) Wireless Operations via Transmitter Pack and Integrated Wireless Receiver:

When both the loudspeaker and transmitter pack's volume gain controls were set to their highest/maximum settings the greatest SPL achieved during voice broadcast was 101.4 db.

Local Wired Operations via Handheld Microphone:

When the loudspeaker volume gain control was set to its highest/maximum setting the greatest SPL achieved during voice broadcast was 104.2 db.

Cellular Wireless Operations via SWAT Network Gateway™ Box:



When the loudspeaker and SWAT Network Gateway Box were set to their highest/maximum settings the greatest SPL achieved during voice broadcast was 106.8 db.

CONTACT INFORMATION:

For additional information regarding these tests/results, please contact:

Aaron Dexter
Marketing Manager
Enforcement Technology Group, Inc.
400 N. Broadway, 4th Fl.
Milwaukee, WI 53202
Phone: 414-276-4471
Fax: 414-276-1533
Email: aaron@etgi.us
Visit: www.etgi.us